

### **AMENDMENTS TO THE CLAIMS**

This listing of the claims will replace all prior versions and listings of the claims in this application.

#### **LISTING OF THE CLAIMS:**

1. (Currently amended) A strain sensor which consists of a polymer that has been irradiated with less than  $1 \times 10^{15}$  ions /cm<sup>2</sup> in a portion of its surface to ~~produce-exhibit~~ strain dependent electrical properties for producing a measurable electrical signal that is linear with increasing strain. ~~with~~ conducting tracks being deposited onto the treated portion to enable the sensor to be connected to an external electric circuit.
2. (Original) A strain sensor as claimed in claim 1 in which the polymer is a polyimide film.
3. (Currently amended) A method of forming a strain sensor from a polymeric film which includes the steps of selectively irradiating a surface of the polymer with high energy radiation at an intensity less than  $1 \times 10^{15}$  ions /cm<sup>2</sup> to ~~produce-exhibit~~ strain dependent electrical properties in selected portions of the surface for producing a measurable electrical signal that is linear with increasing strain.
4. (Original) A method as claimed in claim 3 in which the high energy radiation carbonizes the polymer to form conductive particles in the polymer.
5. (Original) A method as claimed in claim 3 in which high energy ions impinge on a polymer film containing precursor metal compounds, such that decomposition of the precursor leads to nucleation of conducting metal particles.
6. (Previously presented) A method as claimed in claim 3 in which the polymer is a polyimide.

7. (Previously presented) A method as claimed in claim 3 in which conducting tracks are deposited onto the treated polymer to enable the device to be connected to an external electric circuit.

8. (Currently amended) A strain sensor made by the method of claim 3.